INSTALLATION RESTORATION PROGRAM

FURTHER ACTION DECISION DOCUMENT FOR SITE 5 FINAL

MICHIGAN AIR NATIONAL GUARD
ALPENA COMBAT READINESS TRAINING CENTER
ALPENA, MICHIGAN

September 1997

Air National Guard
Andrews AFB, Maryland

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Further Action Decision Document for Site 5. This document presents the rational for selecting groundwater monitoring as the proper remedial action at site 1.

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STATE OF MICHIGAN

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RUSSELL J. HARDING, Director

REPLY TO:

ENVIRONMENTAL RESPONSE DIVISION
KNAPPS CENTRE
PO BOX 30425
LANSING MI 48909-7925

August 19, 1997

Mr. Paul Wheeler
ANGRC/CEVR
3500 Fetchet Avenue
Andrews AFB, Maryland 20762-5157

SUBJECT: Phelps Collins ANG, Alpena County

Dear Mr. Wheeler:

Staff from the Michigan Department of Environmental Quality (MDEQ) have reviewed the Installation Restoration Program, Draft Final Decision Documents, dated July 1996, for sites 1, 3, 5, 6, 7, 8, 9, and the Final Decision Documents for sites 11, 14, 15, and 16, which were date May 1996. Staff have provided the following comments concerning the documents:

A "Limited Action Alternative" is approved for sites 1, 5, 6, 7, and 9 to monitor for exceedances of Groundwater Surfacewater Interface (GSI) criteria. The proposed alternative is to include the installation of wells (per the June 10, 1997 meeting minutes), quarterly sampling and institutional controls to prevent public exposure. Should exceedances of the GSI standard occur, a more aggressive remedial action may be requested for the site.

While the proposed monitoring addresses downgradient GSI concerns regarding the sites, additional sampling to verify that source area soils and groundwater are remediated are still needed prior to closure. It will be necessary to demonstrate that groundwater, in the source area as well as downgradient, does not exceed appropriate standards for a minimum period of one year, prior to closure. Institutional controls on the property will need to take into account all relevant exposure pathways as required under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, 20118 (6(d(ii)).

The Decision Documents for sites 3 and 8 had proposed no action alternatives for the sites. It was agreed in our June 10, 1997 meeting that a limited amount of sampling will take place to verify previous sampling at the sites. Should the agreed upon sampling indicate that contamination is not present at the proposed locations, a no action alternative will be approved for the sites.

Staff are in concurrence with the "No further Action" decisions reached in the "Final Installation Restoration Program Decision Documents" prepared for sites 11, 14, 15, and 16. Based on the above referenced reports, the levels of contaminants which will remain in soils have been characterized and do not pose an unacceptable risk on the basis of standardized exposure assumptions and acceptable risk levels (Residential Cleanup Criteria), as described in the provisions of R 299.5709 to R299.5715 of the administrative rules of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The sites can be considered closed with regard to these contaminants.

In regards to the forthcoming sampling at the Phelps Collins ANG base, it is recommended that the Data Quality Objectives and the level of QA/QC used correspond to Level III (three) Data Quality. It is also recommended that the constituents of concern be expanded to include the reporting of all Method 8260 aromatics, plus dimethylbenzenes and solvents. In those areas where aviation gasoline may have been used, or lost, ethylene dibromide should be included in the analysis. PCB's should be included in at least one sampling event in the dump area. The QAPP should include specific information with regard to the analytical laboratory and procedures to be used.

Please notify MDEQ district staff when the proposed sampling is to take place. If you have any questions or need further information please feel free to contact Mr. Andy Stempky at 517-731-4920, or or you may contact me.

Sincerely,

Dan Schultz

Dan Schultz, Chief
Field Operations Section
Environmental Response Division
517-241-7706

cc: Kimble, Alpena ANG
Delaney, MDEQ
Alford/Stempky/file, MDEQ
c. file (aps)

ACRONYM LIST

ANGRC	Air National Guard Readiness Center
ARARs	Applicable or Relevant and Appropriate Requirements
BRA	Baseline Risk Assessment
COCs	chemicals of concern
CRTC	Combat Readiness Training Center
DOD	Department of Defense
FS	Feasibility Study
GSI	Groundwater/Surface Water Interface
HQ	hazard quotient
IRP	Installation Restoration Program
MDEQ	Michigan Department of Environmental Quality
MERA	Michigan Environmental Response Act
MIANG	Michigan Air National Guard
RAOs	remedial action objectives
RI	remedial investigation
SI	site investigation

1.0 INTRODUCTION

This final decision document presents the rationale for the limited action response proposed for the Michigan Air National Guard's (MIANG's) Alpena Combat Readiness Training Center (CRTC) Site 5, the second fire training area. The draft final decision document was reviewed by the Michigan Department of Environmental Quality (MDEQ) and approved in the August 19, 1997 letter provided in Appendix A. This document is part of the U.S. Department of Defense's (DOD's) Installation Restoration Program (IRP).

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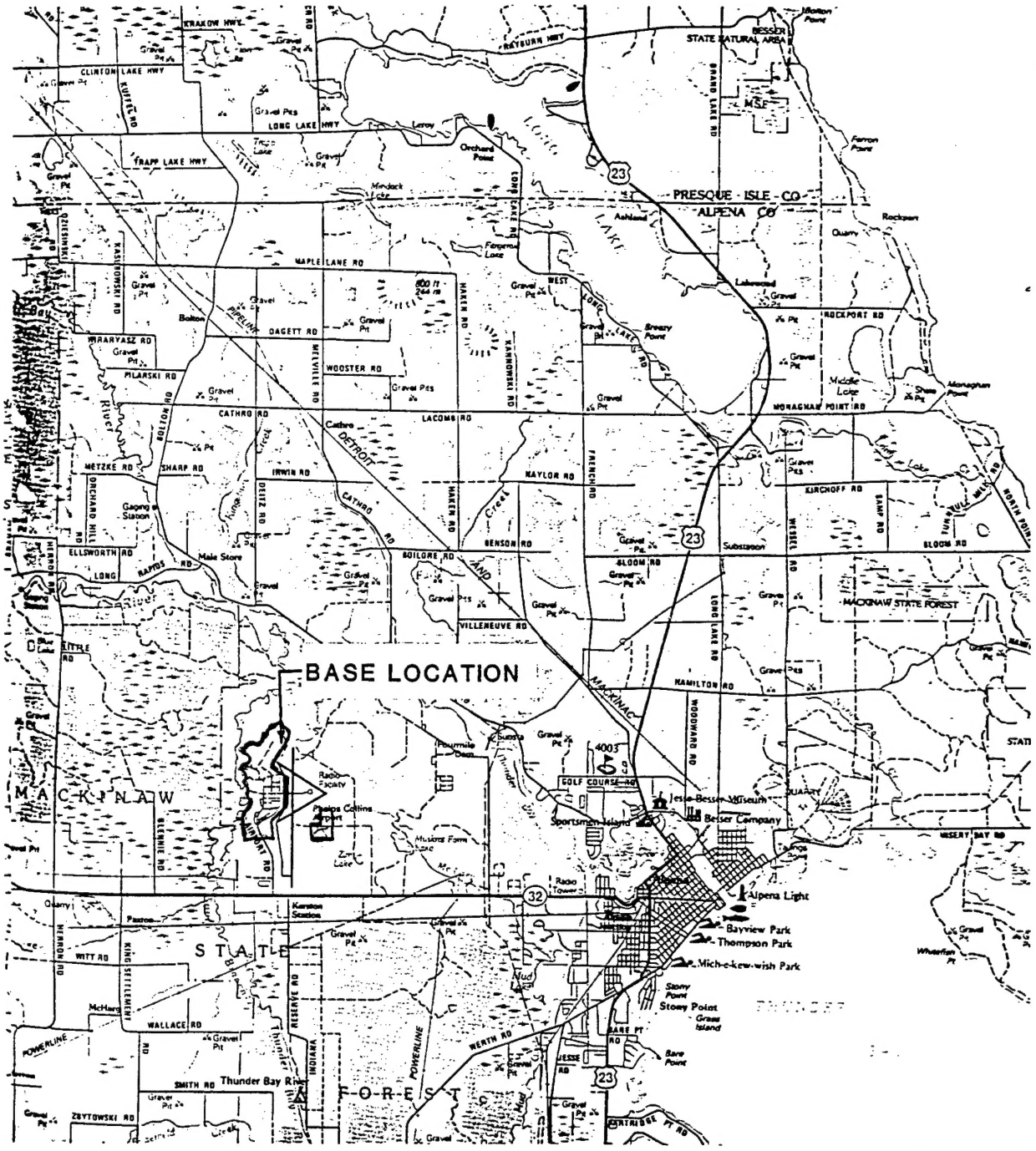
2.0 SITE DESCRIPTION AND HISTORY

The MIANG Alpena CRTC is located at the Alpena County Regional Airport, approximately 5 miles west of the city of Alpena (Figure 1). The Alpena County Airport occupies approximately 3,000 acres of land. MIANG leases and has exclusive rights to approximately 600 acres of that property for the Alpena CRTC.

The Alpena CRTC has a long history of military and training use. Since 1952, the Alpena CRTC has primarily been used as a training facility. Training takes place year-round with the greatest influx of personnel occurring during the months of April through September. The Alpena CRTC has had no assigned aircraft since the mid-1950s, except for a period between 1964 and 1972, when a detachment of aircraft and personnel were on 24-hour intercept alert.

Site 5 was used by MIANG units for training exercises. From 1965 to 1974, approximately two to three fire training exercises were conducted each year. Approximately 300 gallons of JP-4 jet fuel were applied to the ground and ignited in each training exercise. The site lacked formal containment structures such as a concrete pad or berm. The site has not been used for fire training since 1974. Features of Site 5 are presented in Figure 2.



QUADRANGLE LOCATION

0 2.5 5

SCALE IN MILES

north

NOTE

BASE MAP DEVELOPED FROM THE MICHIGAN ATLAS AND GAZETTEER PAGE 84, FOURTH EDITION SECOND PRINTING.

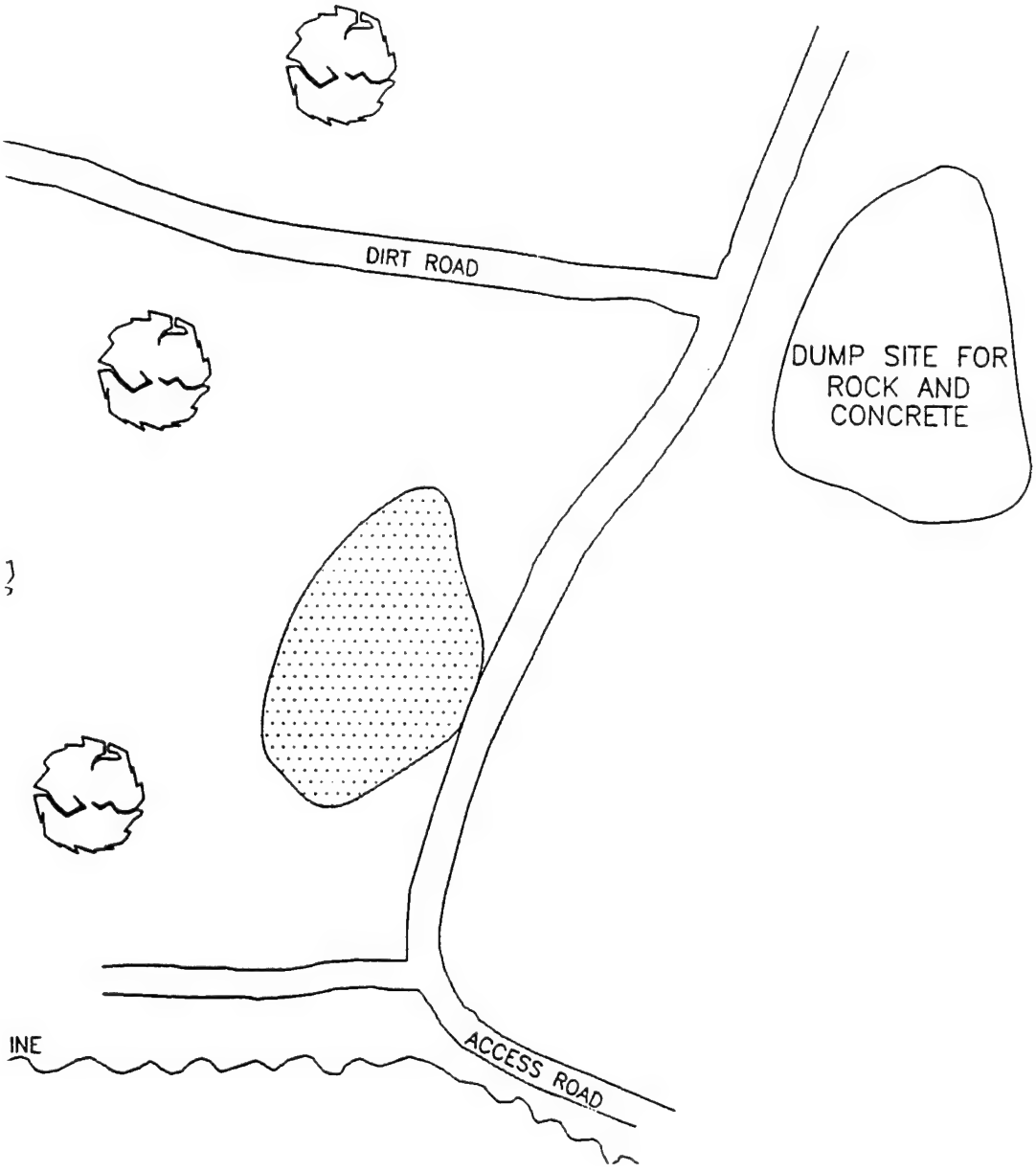
MICHIGAN AIR NATIONAL GUARD
ALPENA CRTC
ALPENA, MICHIGAN

BASE LOCATION MAP

FIGURE 1

MONTGOMERY WATSON

DIRT ROAD
GRASS
TREE LINE



LEGE

ST

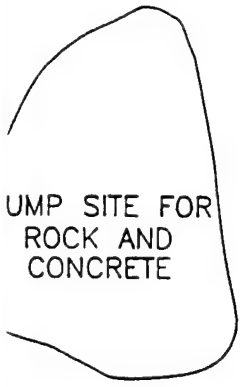
TR

0 50

SCALE IN FEE

MI

SITE 5



LEGEND

STUDY AREA

TREES

0 50 100

SCALE IN FEET

north

MICHIGAN AIR NATIONAL GUARD
ALPENA CRTC
ALPENA, MICHIGAN

SITE 5 - SECOND FIRE TRAINING AREA:
SITE FEATURES MAP

FIGURE 2

MONTGOMERY WATSON

3

3.0 SUMMARY OF SITE ANALYSIS

Our investigative work at Site 5 included both the site investigation (SI) from 1987 to 1991, and the remedial investigation (RI) from 1992 to 1993. The SI for the soil included soil vapor monitoring, and soil boring and sampling between 1987 and 1991. We collected and analyzed three rounds of groundwater samples as part of the SI in 1987, 1988, and 1991. The RI field work included surface geophysical surveys in 1992. In addition, we collected and analyzed soil and groundwater in 1993 as part of the RI.

Figures 2-4 and 2-10 in the Final Feasibility Study (FS) (Montgomery Watson, 1996) show the soil and groundwater sampling locations for Site 5. The SI Report and the RI Report (The Earth Technology Corporation, 1995) include the details on the sampling, including the depth of each sample, constituent contamination, the depth of the contamination, and the methods used in collecting and analyzing the samples. The following sections are a discussion of the chemicals of concern (COCs) identified in the FS for groundwater and soil at Site 5.

3.1 Groundwater

Constituents in groundwater samples from Site 5 were compared with Applicable or Relevant and Appropriate Requirements ARARs to identify COCs. ARARs considered in the FS include:

- Generic Industrial Cleanup Criteria for health based drinking water value (Industrial Drinking Water Values) as outlined in the Michigan Environmental Response Act (MERA), Operational Memorandum #14, Revision 2, June 1995.

- Generic Industrial Groundwater/Surface Water Interface (GSI) as outlined in the MERA, Operational Memorandum #14, Revision 2, June 1995.

Based on sampling results, benzene is present in the groundwater at Site 5; benzene was present in samples taken in 1987, 1988, 1991, and 1993 at up to four locations at Site 5 (SF5MW1, SF5MW4, SF5MW5, and SF5MW8). During the most recent (1993) sampling round, benzene

was present at levels exceeding Industrial Drinking Water Values in wells SF5MW1 and SF5MW8. No other constituents were present at concentrations above Industrial Drinking Water Values during the 1993 sampling. There were no wells sampled northeast or east (downgradient) of SF5MW1 and SF5MW8 to determine the extent of the benzene in the groundwater. Groundwater results from 1987 to 1993 show a general decline through time in the benzene concentrations.

3.2 Soil

Constituents in soil samples from Site 5 were compared with ARARs to identify COCs. ARARs considered in the FS include:

- Generic Industrial Cleanup Criteria for soil direct contact (Industrial Direct Contact Values) as outlined in the MERA, Operational Memorandum #14, Revision 2, June 1995.

- Generic Industrial Cleanup Criteria for soil considered protective of groundwater as outlined in the MERA, Operational Memorandum #14, Revision 2, June 1995.

Based on information presented in the RI Report, the concentrations of contaminants in soil samples collected at Site 5 do not exceed the Industrial Direct Contact Values.

Based on sampling results, two metals are present at concentrations exceeding Default Background Values. Lead was present in samples from locations SF5SB7 and SF5SB10, and arsenic was present in a sample from location SF5SB1a. Lead and arsenic were not present in groundwater samples collected at Site 5 at levels exceeding the Industrial Drinking Water Values. Specifically, no lead was present in concentrations above Industrial Drinking Water Values in monitoring well SF5MW1 (located downgradient of SF5SB7) or in SF5MW5 (located downgradient of SF5SB10). No arsenic was present in samples taken from monitoring well SF5MW5 (located downgradient of SF5SB1a). Therefore, the soil at Site 5 is considered protective of groundwater.

Based on the analysis of the site in the FS, there are no contaminants that require remediation in the soil at Site 5.

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4.0 RISK ASSESSMENT

A baseline risk assessment (BRA) was performed during the RI to assess the risks posed to human health and the environment by the contaminants at the Alpena CRTC sites. This section summarizes the BRA results for Site 5. The complete BRA analysis for Site 5 is presented in the RI Report.

No current complete exposure pathways were identified in the RI Report BRA for Site 5. The only future exposure pathway considered complete involved fish consumption from Lake Winyah. Carcinogenic and non-carcinogenic exposures were evaluated for all complete pathways in the RI Report BRA. No future risk was calculated in excess of the Michigan Department of Environmental Quality (MEDQ) of $1x10^{-5}$ for the recreational adult and child consuming fish from Lake Winyah. All hazard quotients (HQs) were determined to be below 1, indicating a low potential for adverse non-carcinogenic effects.

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5.0 FEASIBILITY STUDY

The FS considers several alternatives for remediation of Site 5. The remedial alternatives analyzed for Site 5 include:

- No Action: The No Action Alternative serves as a baseline for comparison with other remedial alternatives. Under this alternative, no remedial actions would be completed at Site 5 to contain or reduce the contamination in the soil and/or groundwater.

- Limited Action for Groundwater (Natural Attenuation, Monitoring, and Restrictions): Under the Limited Action Alternative the contamination in the groundwater would not be contained or treated, but allowed to naturally attenuate. Sampling of the groundwater on a quarterly basis, with three rounds per year, would be used to monitor the benzene levels as natural attenuation occurs. Institutional controls would be implemented to ensure that groundwater is not used while the sampling activities are completed.

- In-Situ Groundwater Treatment: This alternative would include in-situ treatment (air-sparging) for the groundwater. Institutional controls would be used to ensure that groundwater is not used as a drinking source during remediation.

- Aboveground Groundwater Treatment: This alternative would include aboveground treatment of the groundwater with air stripping. Institutional controls would be used to ensure that groundwater is not used as a drinking source during remediation.

The Limited Action Alternative is the selected alternative for Site 5. This alternative will provide overall protection of human health and the environment, and offers the most cost effective remediation of the groundwater contamination at Site 5. The Limited Action Alternative will be protective of human health and the environment. The alternative will meet the remedial action objectives (RAOs) and ARARs established for groundwater and soil. Historical groundwater sampling has shown a decrease in the benzene groundwater contamination over time. This

decrease in benzene concentrations indicates that attenuation is occurring by natural processes at the Site 5. This alternative will include the installation of additional wells and continued sampling to monitor the natural attenuation and verify the extent of the benzene. While the natural attenuation is occurring, institutional controls will prevent human exposure to benzene.

The In-Situ Groundwater Treatment Alternative would be protective of human health and the environment. The alternative would meet the RAOs and ARARs for groundwater and soil. The cost of this alternative is almost three times that of the Limited Action Alternative.

The Aboveground Groundwater Treatment Alternative would be protective of human health and the environment. The alternative would meet RAOs and ARARs established for groundwater and soil. The Aboveground Groundwater Treatment Alternative would be equally effective in treating the groundwater contamination as the In-Situ Groundwater Treatment Alternative. The cost of this alternative is over four times more expensive than the limited action alternative.

The No Action Alternative would not meet all ARARs or RAOs and therefore is not an acceptable alternative.

5.1 Selected Alternative: Limited Action Alternative

Specifically, the Limited Action Alternative will involve groundwater sampling on a quarterly basis, with three sampling rounds per year to assess the natural attenuation of the benzene. Initially four additional wells will be installed at the site. Sampling will be completed until benzene levels are shown to meet ARARs and RAOs. A final closure report will be prepared to document sampling activities and results.

While sampling activities are taking place, institutional controls will be implemented by MIANG to prevent used of groundwater at the site. Groundwater is currently not the source of drinking water; therefore, this should not be an issue.

6.0 CONCLUSION

Based on the results of the field investigation, there is benzene contamination in the groundwater which warrants further action. There is no soil contamination at Site 5 requiring any type of remediation.

The benzene in the groundwater is the only contaminant at Site 5 that requires additional remedial activities. The source of the benzene is likely past practices at the site. The site no longer functions as a fire training area. The groundwater sampling data show a general decline in the benzene overtime. The levels of benzene in the groundwater at Site 5 do not warrant an active remediation alternative. The proposed alternative for Site 5 involves continued sampling and monitoring of the benzene as it attenuates. Once monitoring shows that the benzene levels have attenuated to levels meeting ARARs and RAOs, no additional investigative or remedial activities will be required at this site.

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7.0 DECISION

On the basis of the findings at the Alpena CRTC Site 5, there is groundwater contamination. No active remediation will be conducted at the site, instead the site will be monitored as natural attenuation occurs. A final closure report will be prepared once the contaminant levels are determined to meet ARARs and RAOs. Following the final closure report, this site will be removed from further consideration in the IRP process, and no further investigative or remedial activities will be conducted with regard to this site.

David D. VanTabbel — 7 Oct 97

Chief, Environmental Division — Date

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Michigan Department of Environmental Quality

[ ] Concur

[ ] Non-Concur (Please provide reason)

Signature — Title — Date

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8.0 REFERENCES

Hazardous Materials Technical Center, 1985. *Installation Restoration Program Records Research: Phelps Collins Air National Guard Base, Alpena, Michigan.*

The Earth Technology Corporation, 1993. *Site Investigation Report, Combat Readiness Training Center, Michigan Air National Guard, Alpena County Regional Airport, Alpena, Michigan.*

The Earth Technology Corporation, 1995. *Final Remedial Investigation Report, Alpena Combat Readiness Training Center, Alpena County Regional Airport, Michigan Air National Guard, Alpena, Michigan.*

Montgomery Watson, 1996. *Final Feasibility Study, Alpena Combat Readiness Training Center Alpena, Alpena Michigan.*

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APPENDIX A

LETTER FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

STATE OF MICHIGAN

JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973
INTERNET: www.deq.state.mi.us
RUSSELL J. HARDING, Director

REPLY TO:
ENVIRONMENTAL RESPONSE DIVISION
KNAPPS CENTRE
PO BOX 30426
LANSING MI 48909-7926

August 19, 1997

Mr. Paul Wheeler
ANGRC/CEVR
3500 Fetchet Avenue
Andrews AFB, Maryland 20762-5157

SUBJECT: Phelps Collins ANG, Alpena County

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Dan Schultz

Dan Schultz, Chief
Field Operations Section
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cc: Kimble, Alpena ANG
Delaney, MDEQ
Alford/Stempky/file, MDEQ
c. file (aps)